

The National 4 Mathematics course consists of 3 units:- Expressions and Formulae  
Relationships  
Numeracy

Each unit is assessed in school and students must pass all units along with a further Added Value unit at the end of the course to achieve National 4 Mathematics. The Added Value unit is an exam.

Assessments will take place throughout S4. We will inform students of any formal tests well in advance of the test date. As a safety net, it may be necessary to complete further internal assessments at National 3 level.

Students will be issued with a formal homework exercise approximately once every 2 weeks. They will be expected to regularly look over classwork and to study throughout the year, using resources issued or recommended by the department. They should ask for help with anything causing difficulty.

The department hopes to continue to offer Supported Study classes on Monday and Wednesday lunchtimes. We keep a register of attendance at Supported Study.

It is advisable that pupils have their own scientific calculator for this course.

Progression on successful completion of National 4 Mathematics may be National 5 Applications of Mathematics or National 5 Mathematics. Maths teachers will advise on the suitable progression route.

#### Summary of content

##### **Expressions and Formulae**

- Algebra – multiply out single brackets, factorise using a common factor, simplify expressions, use substitution, extend patterns and find formulae for patterns, find gradient of a straight line
- Geometry – circumference and area of circles, areas of 2D shapes, surface areas of prisms, volume of prisms, rotational symmetry
- Statistics – frequency tables, use mean, median and mode and range to compare data, construct pie charts, calculate and interpret probabilities

##### **Relationships**

- Algebra – recognise the formula for straight lines, draw straight lines, solve equations, change the subject of a formula
- Geometry – use Pythagoras' theorem, use scale factors, use shape properties to find angles, use circle properties to find angles
- Trigonometry – find lengths of sides or angles in right-angled triangles
- Statistics – construct scattergraphs, draw and use line of best fit

##### **Numeracy**

- Number – rounding, integers, fraction or percentage of an amount, percentage increase/decrease, equivalence of fractions, decimals and percentages, ratio and proportion, calculate distance given speed and time
- Measure – time intervals, perimeter, area and volume, use measuring instruments and read scales, convert between units
- Statistics – extract, interpret and make decisions based on data from graphs, charts and tables, make decisions based on trends in data, make decisions based on probability